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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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QWEST COMMUNICATIONS INTERNATIONAL INC
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DENVER, CO 80202

EXAMINER

TRINH, TAN H

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 04/11/2005

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,241

Applicant(s)

HOHNSTEIN ET AL.

Examiner

TAN TRINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 22-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 22-29 and 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11, 13, 14.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 7-20-2003, 01-13-2004 and 4-23-2004 has been received and placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10-13, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower (U.S. Patent No. 6,132,306) in view of Hagerman (U.S. Patent No. 6,301,238).

Regarding to claims 1, 11 and 31, Trompower teaches a cellular communication system comprising: a plurality of access points, each access point having at least one omnidirectional antenna forming a substantially uniform coverage area around the access point; and a plurality of subscriber units, each subscriber unit having a antenna forming a directional coverage area, each subscriber unit communicating or (transmitting/receiving information packet) with a particular access point through transmissions between the subscriber unit and the omnidirectional antenna for the particular access point (see figs. 2 and 6A, col. 1 lines 55-60, col. 8 lines 42-45, col. 9, lines 41-67). But, Trompower fails to show the subscriber unit having directional antenna, the

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directional coverage are selectable from a plurality of directional coverage area provided by the subscriber unit.

However, Hagerman the subscriber unit having directional antenna, the directional coverage are selectable from a plurality of directional coverage area provided by the subscriber unit (see figs. 1-6, col. 2, lines 3-67, col. col. 3, lines 1-19, col. 4, lines 1-col. 5, line 22 and col. 12, lines 15-25).

Since Trompower and Hagerman both teach cellular system, it would have been obvious to one of the ordinary skill in the art at the time invention was made to modify Trompower subscriber antenna and the providing of the teaching of Hagerman on the subscribers unit with directional antennas and directional coverage area thereto in order to reduce co-channel interference during communications.

Regarding to claim 2, Trompower teaches a routing network interconnecting the plurality of access points (see Figs. 2 and 6, col. 22 lines 32-36).

Regarding to claim 3, Trompower teaches wherein the routing network comprises a distributed network of distribution points (see fig. 2 and 4B, col. 23, lines 27-51).

Regarding to claim 4, Trompower teaches wherein at the distribution point is in the same location as one access point (see fig. 6A, and col. 5 lines 40-67, col. 6, line 1, and col. 35, lines 4-20).

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Regarding to claim 5, Trompower teaches wherein at least one access point is in wireless communication with the routing network through at least one backhaul antenna (see col. 6 lines 49-67, col. 7 lines 1-6, col. 32 lines 38-43).

Regarding to claim 6, Trompower teaches wherein transmissions between the subscriber unit and the access point comprise packet information (see col. 23, lines 45-51)

Regarding to claim 7, Trompower teaches wherein the subscriber unit is a terminal and network controller comprising at least one interface, each interface providing access to the wireless communication system (see col. 31, lines 38-60).

Regarding to claim 8, Trompower teaches the terminal network controller further comprises a routing switch routing information packets to and from the at least one interface (see col. 23 lines 29-44).

Regarding to claim 10, Trompower teaches wherein the directional antenna is operative to be positioned to optimize transmissions between the subscriber unit and the particular access point (see col. 24 lines 24-37).

Regarding to claim 12, Trompower teaches wherein at least one access point has both at least one omnidirectional antenna and at least one directional antenna (see figs. 9 and 10, col. 32, lines 32-42).

Regarding to claim 13, Trompower teaches wherein access points transmit from omnidirectional antennas at a first frequency and from directional antennas at a second frequency different than the first frequency (see fig. s 9 and 10, col.32, lines 32-42 and col. 33, lines 38-51).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower (U.S. Patent No. 6,132,306) in view of Hagerman (U.S. Patent No. 6,301,238) further in view of Lane (U.S. Patent No. 5,400,040).

Regarding to claim 9, Trompower or Hagerman fails to show the directional antenna comprises a plurality of antenna patches, the subscriber unit selecting at least one antenna patch as the directional antenna.

However, Lane teaches the directional patch antennas wherein the multiple patch radiators are used to control the direction of beam of radio frequency energy from the antenna.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time invention was made to modify the Trompower and Hagerman system and the providing of the teaching of Lane on the antenna patches there to in order to reduce the effect of electromagnetic field radiation to the human head.

5. Claims 14-19,22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower (U.S. Patent No. 6,132,306) in view of Norman (U.S. patent No. 6,049,533).

Regarding to claim 14. Trompower teaches a method of wireless communication: the transmitting downlink information in a substantially uniform coverage area around each of a plurality of access points, receiving the downlink information at a subscriber unit; transmitting

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uplink information in a focused coverage area from the subscriber unit; and receiving the uplink information at one of the access points (see fig. 6A, col. 1, lines 55-60, col. 5, lines 40-46); But Trompower fails to teach a routing information between the plurality of the access points by receiving the information in a distribution point and sending the information to an access point in communication with the distribution point if the information is destined for a subscriber unit in communication with the access point, otherwise forwarding the subscriber to another distribution point in communication with the distribution point.

However, Norman teaches a routing information between the plurality of the access points by receiving the information in a distribution point and sending the information to an access point in communication with the distribution point if the information is destined for a subscriber unit in communication with the access point (see figs. 1-2, and 15-17, col. 21, line 55- col. 23, line 8), otherwise forwarding the subscriber to another distribution point in communication with the distribution point (see col. 23, line 9 - col. 26, lines 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Trompower system and by the providing of the teaching of Norman on the routing information technique so that the packets is routing or reroute to other destination of the received packet as identified in the destination field is the access point itself (see col. 26, lines 24-27).

Regarding to claim 15, Trompower teaches wherein the transmitting in the substantially uniform coverage area around each of the access points comprises transmitting from an

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omnidirectional antenna and receiving the uplink information comprises receiving at the omnidirectional antenna (see fig 6A and col. 26 lines 18-19).

Regarding to claim 16, Trompower teaches wherein the transmitting in a focused coverage area comprises transmitting from a directional antenna and receiving the downlink information comprises receiving at the directional antenna (see fig. 10 directional antenna 290b, and col. 32, lines 32-47).

Regarding to claim 17, Trompower teaches the selecting one of a plurality of antenna patches to form the directional antenna (see fig. 3C for selection of antenna 290, fig. 10 for 290b directional antenna, and col. 18, lines 18-31).

Regarding to claim 18, a method of wireless communication as in claim 16 further comprising aiming the directional antenna to improve receiving the downlink information. (This is a well known, since the antenna has to point and aim on the direction of the antenna pointing the cover area to improve the receiving downlink information).

Regarding to claim 19, Trompower teaches wherein the downlink information and uplink information comprise packet information (see col. 23, lines 45-51)

Regarding to claim 22, Trompower teaches wherein routing information comprises transmitting the information between each access point and one of a plurality of distribution points (see fig. 6A).

Regarding to claim 23, Trompower teaches wherein the transmitting the information comprises wireless transmission (see fig. 6A and 3A).

Regarding to claim 24, Trompower teaches wherein at least one access point is in the same location as at least one distribution point (see fig. 6A, and col. 5 lines 40-67, col. 6, line 1, and col. 35, lines 4-20).

Regarding to claim 25, Trompower teaches the routing the downlink information to one of a plurality of interfaces at the subscriber unit (see col. 23 lines 29-44).

Regarding to claim 26, Trompower teaches the transmitting downlink information in a focused coverage area around each of a plurality of access points receiving the downlink information at a subscriber unit; transmitting uplink information from a substantially uniform coverage area around the subscriber unit; and receiving the uplink information at one of the access points (see fig. 6A, col. 1, lines 55-60, col. 5, lines 40-46).

Regarding to claim 27, Trompower teaches at least one access point, both transmits downlink information in a focused coverage area and transmits downlink information in a substantially uniform coverage area (fig. 2, col. 9 lines 22-67 and col. 10, lines 1-10).

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Regarding to claim 28, Trompower teaches wherein downlink information transmitted in the substantially uniform coverage area is transmitted at a first frequency and downlink information transmitted in the focused coverage area is transmitted at a second frequency different than the first frequency (see fig. s 9 and 10, col.32, lines 32-42 and col. 33, lines 38-51).

6. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower (U.S. Patent No. 6,132,306) in view of Cao (U.S. Pub. No.20020181485).

Regarding to claim 29, Trompower teaches a plurality of access points, each access point transmitting and receiving information packets, each information packet transmitted over a substantially uniform coverage area around the access point; a network of distribution points in communication with the access points, the distribution points routing information packets between the access points; and a plurality of subscriber units, each subscriber unit transmitting and receiving information packets, each subscriber unit transmitting information packets over a focused directional coverage area (see fig. 6A, col. 1, lines 55-60, col. 5, lines 40-46 and fig. 2, col. 9 lines 22-67 and col. 10, lines 1-10). But Trompower fails to teach the access points based upon a forwarding equivalency class (FEC) for each access point.

However, Cao teaches teach the access points based upon a forwarding equivalency class (FEC) for each access point (see figs. 1-4, page 3 and 5, sections [0023, 0052, 0054-0055]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Trompower system and by the providing of the teaching of Cao on the routing information with forwarding equivalency class (FEC) technique so that the

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packets is routing to other destination is protected with containing the mapping between FEC and label information of the identified FEC ID field (see page 5 section [0055]).

Response to Arguments

7. Applicant's arguments with respect to claims 1-19, 22-29 and 31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (703) 305-5622. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh 
Art Unit 2684
Mar. 22, 2005


NICK CORSARO
PRIMARY EXAMINER